

IN THE CLAIMS

The claims are provided as a convenience.

1. (Previously Presented) Capacitive voltage multiplier for generating voltage pulses, preferably up to 100 V, that are higher than the supply voltage for displays, non-volatile memories and corresponding units especially in small electronic devices, such as handheld telecommunication terminals or corresponding devices,

wherein the multiplier comprises a switching capacitor circuit (21) coupled between input (31) and output (32) terminals of the multiplier, said switching capacitor circuit (21) provided with capacitors and switches for charging the capacitors in parallel and discharging them in series in order to deliver a high voltage pulse,

characterised in that the multiplier further comprises a diode chain circuit (22) coupled between said input (31) and output (32) terminals of the multiplier, said diode chain circuit (22) comprising a diode-chain and pumping capacitors for delivering high voltage current.

2. (Original) Capacitive voltage multiplier according to claim 1, characterised in that when high voltage pulse is desired in the switching capacitor circuit (21) the series coupling switches (odd) are activated by a control pulse and all other switches (even) are opened and that in stand-by mode (no pulse) the series coupling switches (odd) are open and all other switches (even) are closed in order to charge the pump capacitors from the supply voltage, and that charge sharing will occur with the charge including the load capacitance (103).

3. (Previously Presented) Capacitive voltage multiplier according to claim 1, characterised in that the switches of the switching capacitor circuit (21) are MEMS switches.

4. (Previously Presented) Capacitive voltage multiplier according to claim 1, characterised in that the output of the switching capacitor circuit (21) is activated at the start of a control pulse.
5. (Previously Presented) Capacitive voltage multiplier according to claim 1, characterised in that an output of the switching capacitor circuit (21) is not coupled via a diode to the output terminal (32) of the multiplier so that current at the end of the control pulse can flow back into the pump capacitors, whereby the charge in the load capacitor is partly restored in the pumping capacitors.
6. (Previously Presented) Capacitive voltage multiplier according to claim 1, characterised in that the diode chain circuit (22) is continuously operated during the control pulse duration and holds the output voltage at a fixed level.
7. (Previously Presented) Capacitive voltage multiplier according to claim 1, characterised in that the diode chain circuit (22) output is through a diode (102) and that no reservoir capacitor is used.
8. (Original) Capacitive voltage multiplier according to claim 1, characterised in that a supply voltage input diode (101) is used for the switching capacitor circuit (21) allowing the initial voltage of the pump capacitors to be higher than the incoming supply voltage.